



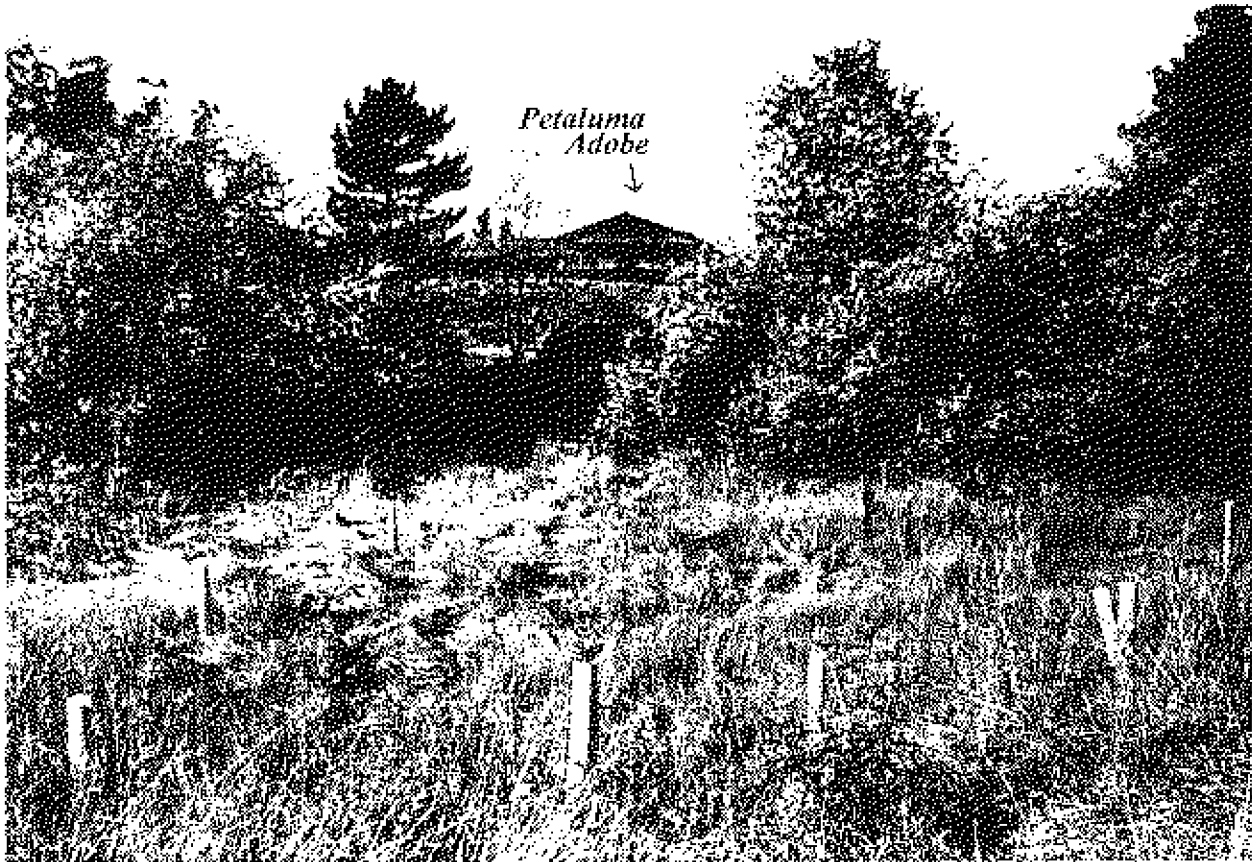
*This eroded bank has been laid back to create wetland terraces inundated by high tides as shown below.*





↑ Arroyo thicket growing in the channel bed. Big leaf maples planted from 5-gallon containers. ↓





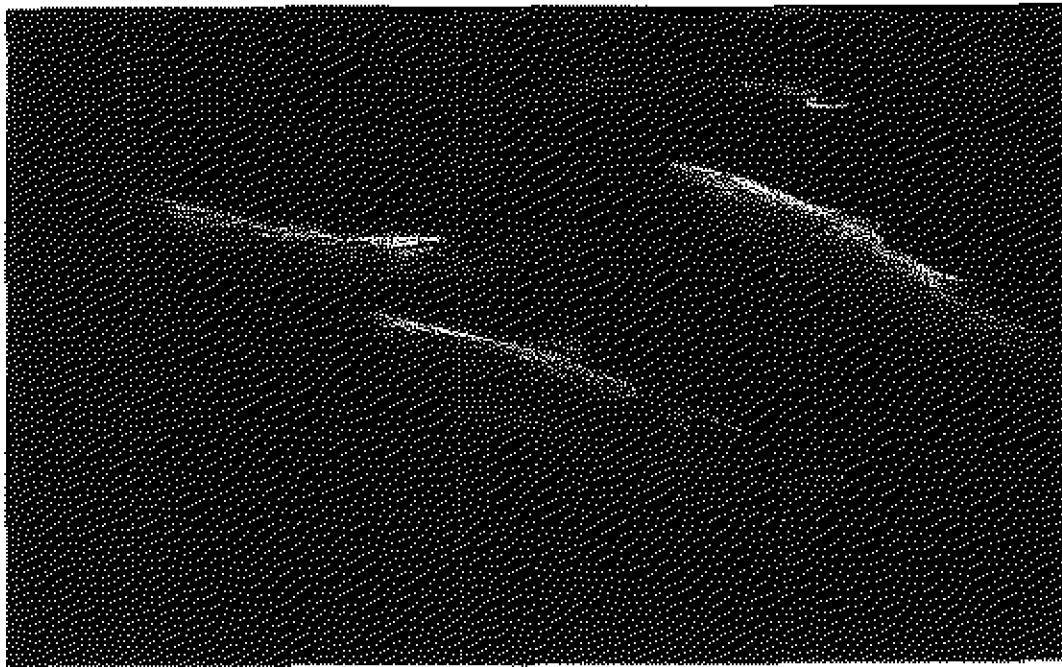
*Polypropylene tree shelters protect oak seedlings from herbivores and dessication at the Petaluma Adobe State Historic Park.*



*Willow cuttings planted in terrace of Adobe Creek.*



*Wetland terraces and a release pond for steelhead trout were excavated in the lower reach of Adobe Creek (upper photo). A drop structure was installed to scour the release pond, ensuring the pool will remain deep for the young smolts. Steelhead and salmon migrate to spawning habitat upstream during high flows.*



## SAN FRANCISCO BAY AS ESTUARY

*"From the diaries of the early explorers the picture we get is of a musty, even swampy land -- Water was everywhere, especially where the land was flat. The explorers suffered far more from mosquitoes, spongy earth, and hard-to-ford rivers than they did from thirst -- even in the heat of summer. Places that are now dry were then described as having springs, brooks, ponds -- even fairly large lakes. In the days before channelization, all the major rivers -- the Carmel, Salinas, Pajaro, Coyote Creek, and Alameda Creek, as well as many minor streams, spread out each winter and spring to form wide, marshy valleys."*

Malcolm Margolin, *The Ohlone Way*, Copyright 1976.

**T**HE San Francisco Bay system once collected water from nearly half the land area of California. This fresh water, filtered clean by marshes, mixed with salty ocean tides to form a complex ecosystem called an estuary. An estuary teems with life. It is a unique area where young fish and other wildlife can begin their lives in an environment less salty and more protected than the ocean. Many fish, such as herring, bass and salmon could not exist without this headstart.

The circulation of water sustains life in the Bay. It carries nutrients to the plants, fish and wildlife who live here, and flushes out the natural and man-caused commercial and residential wastes. Water circulation

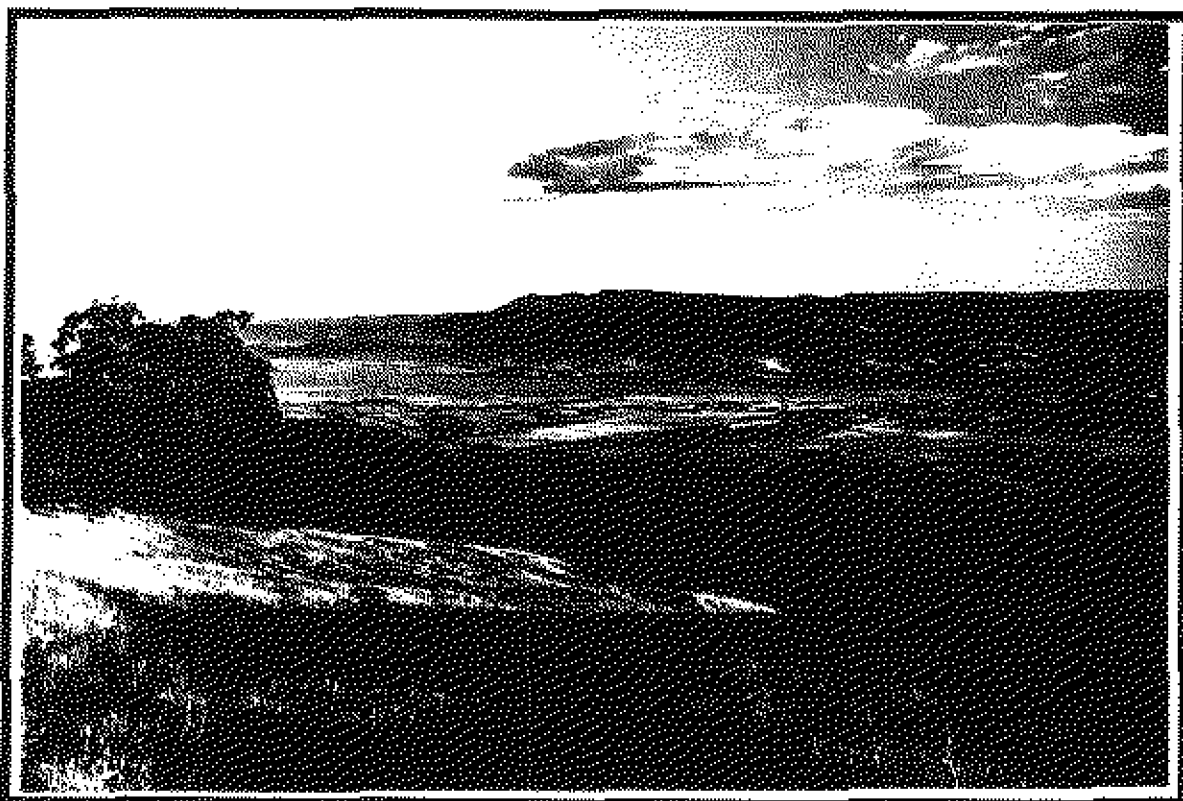
forms a different pattern in each part of the Bay depending on the force of the tides and the quantity of fresh water that enters. Water from the Delta takes about three weeks to reach the Golden Gate in winter. By the end of summer, with only small freshwater inputs, the South Bay requires five months to flush.

People have diverted most of the water that once circulated throughout the Bay toward other uses. As we generate ever more water diversion projects and fill Bay marshes, the delicate balance of fresh and salt water is changed and Bay wildlife is threatened. What life will the Bay hold in the future? What sights will your children and your children's children see as they stand on this spot?

*Interpretive signs, donated by the Coastal Conservancy, were installed along lower Adobe Creek and the Petaluma River trail which surrounds the City's dredge disposal site. These signs help educate the public about the problems affecting the San Francisco Bay Estuary and build community support for local restoration efforts.*



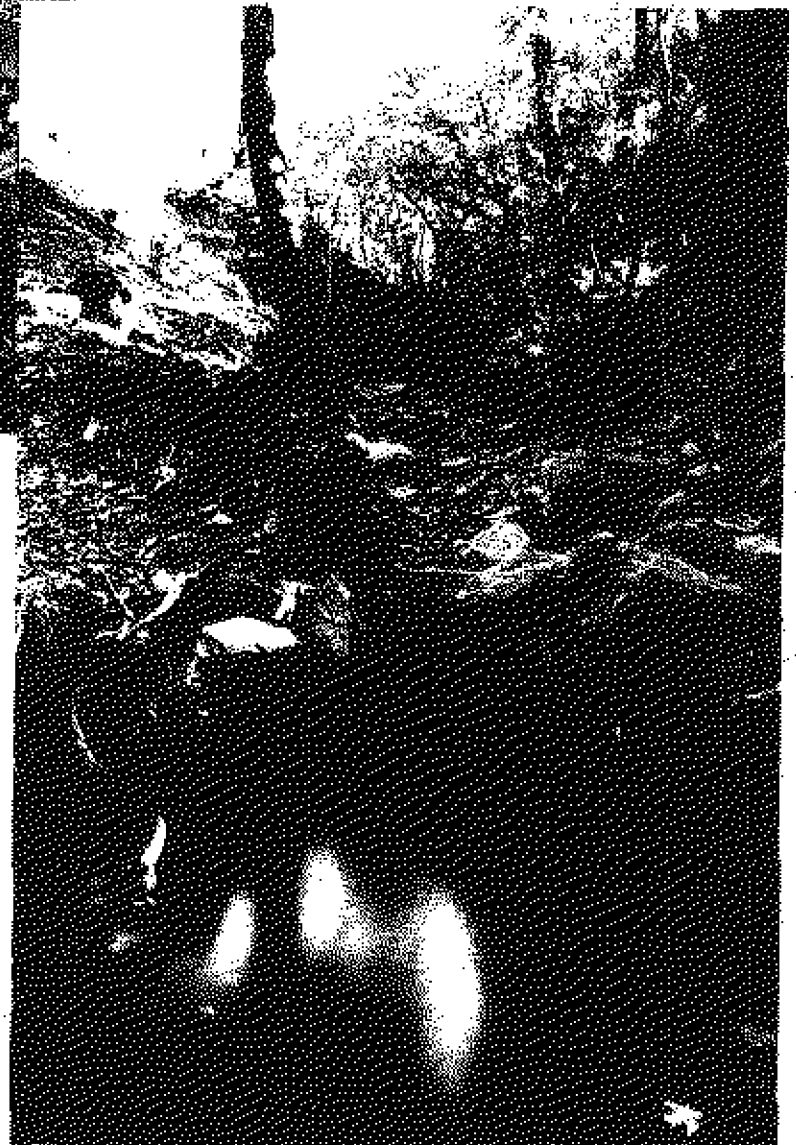
*Extensive riparian overstory along Adobe Creek headwaters at Lafferty Ranch*

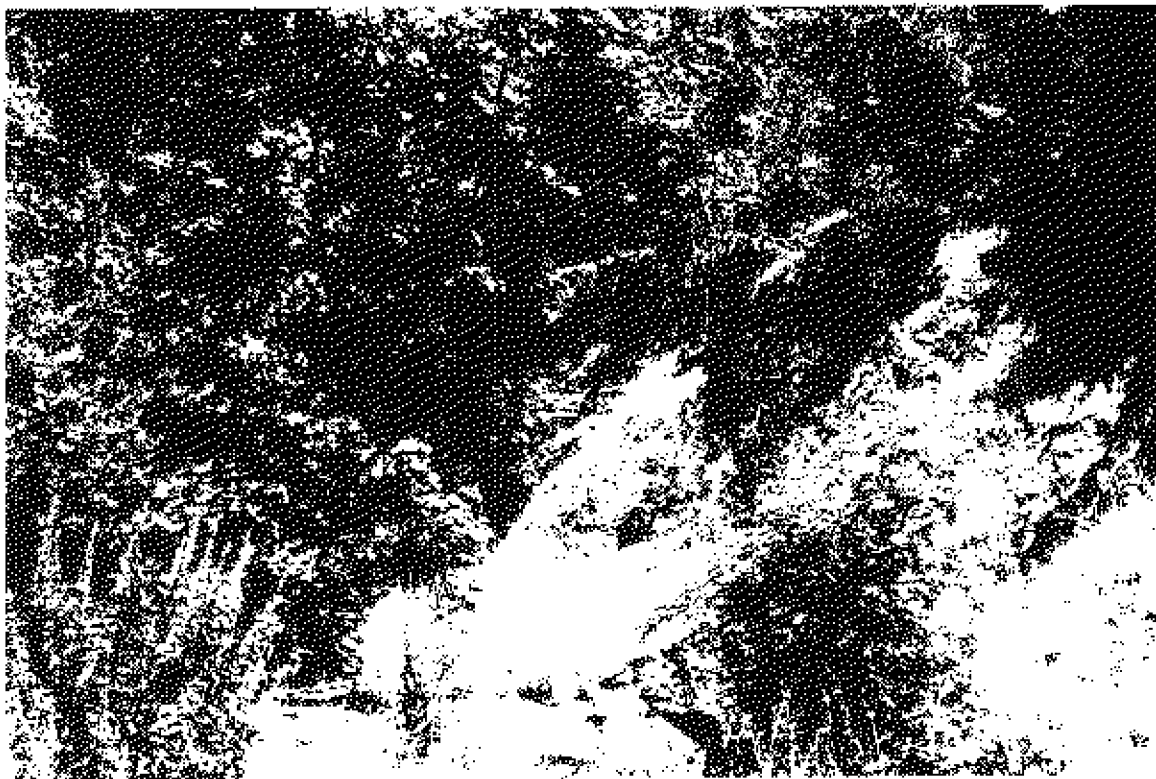


*Adobe Creek near headwaters extending to the confluence Petaluma River*



*Adobe Creek Headwaters  
August 1995*



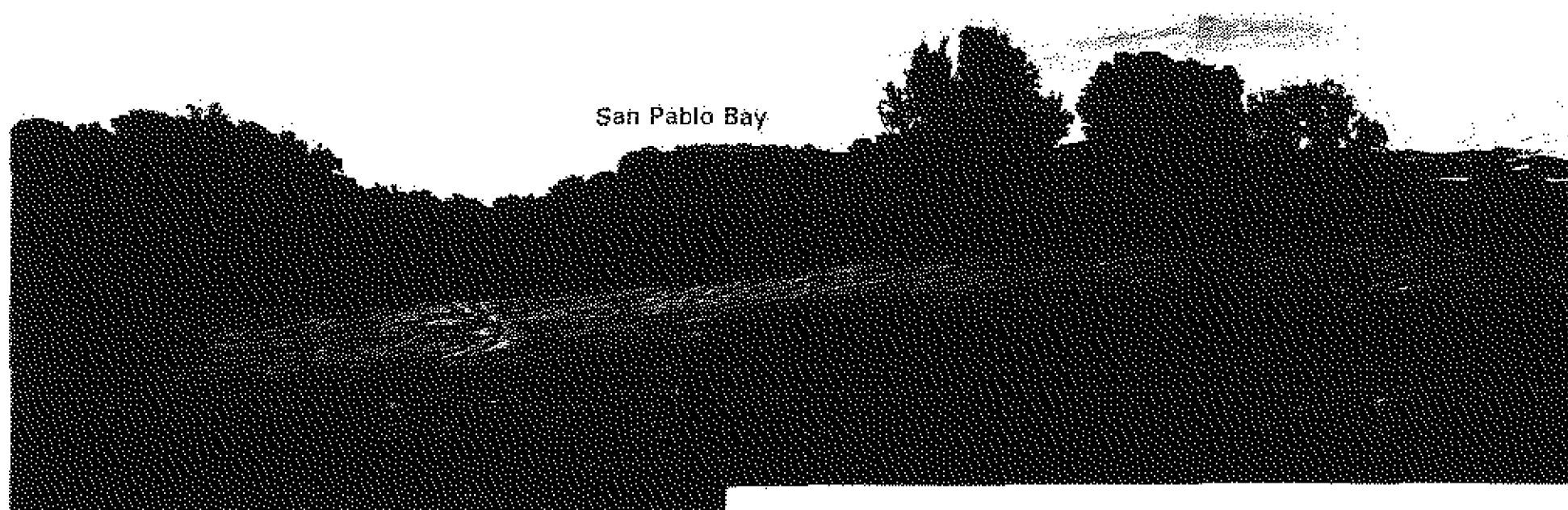


*These landslides occurred above the upper diversion structure where the Adobe Creek channel continues to undercut the toe of the slope. Erosion in the upper watershed causes sedimentation of spawning habitat and lower watershed areas, requiring periodic dredging. Upper watershed improvements would stabilize the creek bank, remove the diversion structure and install a smaller series of drop structures to prevent further damage.*

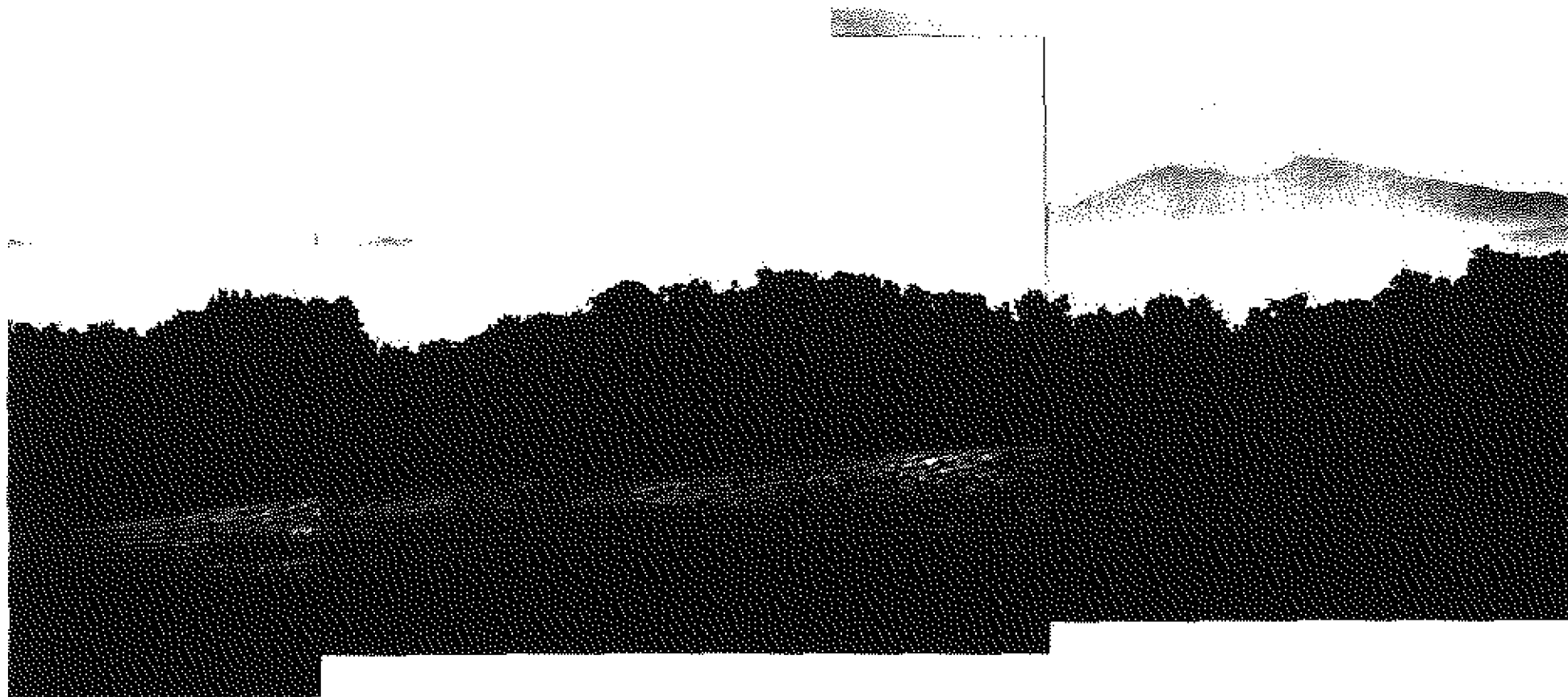




*The upper diversion structure was constructed in the late 1800's to divert water from Adobe Creek to serve the town of Petaluma. The upper diversion structure has caused a deep 18-foot incision in the channel bed. The structure is being undermined and will eventually erode the upper watershed potentially damaging 6 miles of downstream spawning habitat.*



*View from Lafferty Ranch of Adobe Creek riparian corridor in foreground looking at the mouth of the Petaluma River at San Pablo Bay and the East Bay hills beyond.*



*View from Lafferty Ranch of Adobe Creek riparian corridor in foreground looking towards Carquinez Straits, Suisun Marsh and Mt. Diablo.*



*View from Lafferty Ranch of Adobe Creek riparian corridor in foreground looking at the Petaluma River Marsh. The City's Oxidation Ponds are visible in the lower right with Mt. Tamalpais towering above. Gnosz Field airport is visible in the center of the photo. San Pablo Bay and Hamilton Airfield are visible in the upper left corner. The tidal marsh provides critical rearing habitat for anadromous fish and supports many endangered species.*

## ***SECTION IV COSTS AND SCHEDULE***

***"Make no small plans, for they fail to inspire the hearts of men.  
Make only big plans, for they contain magic that will compel men's actions."***

**Daniel Burnham, 1903  
"Father of City Planning"**

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#### IV. COSTS AND SCHEDULE TO IMPLEMENT PROPOSED PROJECT

A detailed cost estimate is provided in Tables IV-1 and IV-2. The proposed budget is summarized in Table IV-3. The proposed budget provides for a three-year schedule of implementation, beginning with the establishment of the Habitat Management Program Endowment Fund in FY 97-98 (\$529,600 grant requested). Establishment of the Watershed Science Project and transfer of technology and science to the local volunteer and agency management group would be implemented in FY 98-99, along with design studies of the upper watershed diversion structure with a requested grant of \$148,513. In FY 99-00 Upper Watershed Improvements would be implemented with additional CALFED grant funding of \$313,654.

The proposed schedule for the Upper Watershed Improvements and Watershed Science Project is illustrated in Figure IV-1. A proposed schedule for the Annual Monitoring and Habitat Management Program is shown in Figure IV-2.

The City's present monitoring program for the lower watershed restoration improvements focuses primarily on the establishment of vegetation and appropriate hydrologic regime. There is presently no comprehensive monitoring program that evaluates stream habitat conditions as a whole system or provides for long-term habitat management needs. Local budgets for proper management and maintenance of restoration projects has proven to be inadequate and provides a significant constraint to restoration efforts. Without adequate funding for the long-term "care and feeding" of restored stream corridors, the ability of the City to undertake restoration improvements will be limited. The Adobe Creek Pilot Project would provide a funding mechanism for the long-term Habitat Management Program in perpetuity and form the basis for expanding the program to the encompass the rest of the watershed.

Funding for the Watershed Science Project is critical to providing training of key agency staff and volunteer coordinators. Monies invested in training activities are expected to generate "third party" benefits as the transfer of knowledge infiltrates various organizations, providing new insights and initiative for other restoration efforts.

Funding for upper watershed improvements is critical to protecting the spawning habitat that exists within Adobe Creek and preventing extensive damage.

**Third Party Impacts.** The City has an established long-standing relationship with the ranchers whose properties are traversed by Adobe Creek and feels confident that an agreement for fencing of the riparian corridor can be achieved.

Third party benefits include the educational benefits to Sonoma State University and many other local schools in environmental science applications and using GIS as a resource management tool; the research value of the program to the S.F. Estuary Institute Regional Monitoring Program; and, the sharing of knowledge and experience with various other communities interested in ecosystem restoration and watershed programs. Long-term benefits to the Petaluma Watershed and North Bay would accrue from the successful pilot project as the program would be rolled out to other tributaries and the Petaluma River with matching contributions from local sources.

Petaluma Watershed  
Model Restoration and Habitat Management Program

TABLE IV-1  
ADOBE CREEK PILOT PROJECT  
UPPER WATERSHED RESTORATION AND HABITAT MANAGEMENT PROGRAM

ESTIMATED COSTS AND BUDGET

PROJECT TYPE, PHASE & TASK	OVERHEAD	SERVICE	MATERIALS	PROJECT	REQUESTED CALFED GRANT			LOCAL
	ADMIN	CONTRACTS	ACQUISITION	TOTAL	FY 97-98	FY 98-99	FY 99-00	MATCH
UPPER WATERSHED IMPROVEMENTS								
Construction/Public Works								
Planning & Environmental Review Phase FY 97-98								
1. Lafferty Access and Management Plan and EIR	\$ 15,600	\$ 78,000	\$ -	\$ 93,600	\$ -	\$ -	\$ -	\$ 93,600
Design Phase FY 98-99								
1. Feasibility Study & Design Plans	4,143	20,713	-	24,856		20,713		4,143
Construction Phase FY 99-00								
1. Construction Cost Estimate	11,838		304,777	316,615			304,777	11,838
2. Construction Management, Inspection & Survey		8,877		8,877			8,877	
TOTAL PROJECT COSTS								
	\$ 31,581	\$ 107,590	\$ 304,777	\$ 443,948	\$ -	\$ 20,713	\$ 313,654	\$ 109,581

1. Cost could be reduced (\$126,000) for 4 miles of fencing if an endowment fund is approved for the Southern Sonoma County Resource Conservation District as described in their proposal.

<b>WATERSHED SCIENCE PROJECT</b>								
<b>Services</b>								
<i>Planning Phase FY97-98</i>								
1. Software & Equipment for Riparian Station	\$ -	\$ -	\$ 15,000	\$ 15,000	\$ -	\$ 15,000	\$ -	\$ -
2. S.F. Estuary Institute Training Services	18,000	90,000 <sup>2</sup>		108,000		90,000		18,000
3. Sonoma State University GIS Mapping Services	4,560	22,800 <sup>2</sup>		27,360		22,800		4,560
<b>TOTAL PROJECT COST</b>	<b>\$ 22,560</b>	<b>\$ 112,800</b>	<b>\$ 15,000</b>	<b>\$ 150,360</b>	<b>\$ -</b>	<b>\$ 127,800</b>	<b>\$ -</b>	<b>\$ 22,560</b>

2. Cost could be reduced if USGS mapping proposal is funded by CALFED.

<b>MONITORING, EDUCATION &amp; HABITAT MANAGEMENT PROGRAM</b>								
<b>Services/Endowment</b>								
<i>Annual Operations and Management Budget</i>								
1. Professional Monitoring and Management/Maintenance Services (Quests Eng.)	\$ 32,320	\$ -	\$ 32,320	\$ 32,320	\$ 15,520	\$ -	\$ -	\$ 16,800
2. Professional Mapping Services (SSU)	960		960	960	960			-
3. Professional Analytical Services/Training (SFEI & EOS)	13,840		13,840	13,840	10,000			3,840
4. Interagency Field Consultation	5,400		5,400	5,400				5,400
5. Agency Maintenance and Management Services	22,500		22,500	22,500				22,500
6. Volunteer Services for Monitoring and Management Activities		22,400	22,400	22,400				22,400
7. Project Management and Administration	9,424		9,424	9,424				9,424
<b>TOTAL OPERATING COSTS</b>	<b>\$ 9,424</b>	<b>\$ 97,420</b>	<b>\$ -</b>	<b>\$ 106,844</b>	<b>\$ 26,480</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 80,384 <sup>3</sup></b>

3. Matching funds from parcel taxes, landscape assessment district, maintenance budgets and volunteer labor (in-kind services).

REQUESTED ENDOWMENT FUNDS NEEDED @ 5% CAPITALIZATION RATE

**\$ 629,600**

TOTAL REQUESTED GRANT:

UPPER WATERSHED IMPROVEMENTS, WATERSHED SCIENCE, & HABITAT MANAGEMENT PROGRAM

FY 97-98	FY 98-99	FY 99-00	CALFED TOTAL
\$ 629,600	\$ 148,513	\$ 313,654	\$ 991,767 <sup>4</sup>

4. Costs would be reduced by \$126,000 if an Endowment Grant is approved for the Sonoma County Resource Conservation District and by \$10,000 if the Digital mapping proposal from USGS is funded by Calfed.

**Petaluma Watershed  
Model Restoration and Habitat Management Program**

TABLE IV-2

**MONITORING, EDUCATION AND HABITAT MANAGMENT PROGRAM  
ANNUAL OPERATIONS AND MANAGEMENT BUDGET**

<b>Questa Engineering Professional Services Contract</b>									
Bi-Annual Inspections and Site Assessment	2 /year	\$2,560 /insp.	\$	5,120	5,120				
Annual Report/Action Plan Professional Services	24 hrs/year	\$80 /hr.		1,920	1,920				
Volunteer Program Coordinator Professional Services	16 hrs/year	\$80 /hr.		1,280	1,280				
Landscape Subcontractor Maintenance Services Crew of 4 @ 5 reaches	1,600 hrs/year	\$15 /hr.		24,000	7,200	16,800			City of Petaluma LAD/Developer Contributions
Subtotal			\$	32,320	\$ 15,520	\$ 16,800			
<b>Envirotech Operating Services Professional Services Contract</b>									
Water Quality Sampling Collection @ 4 sites 2 Techs x 2hrs. (Labor)	40 hrs.	\$26 /hr.		1,040		1,040			Questa Engineering Budget
Water Quality Laboratory Services 10 parameters/site x 4 sites	\$175 /site	4 /year		2,800		2,800			EOS : Dissolved Oxygen, Turbidity, Ph, streamflo Coliform, Alkalinity, Hardness, Salinity, TSS, Temp
Subtotal			\$	3,840	\$ -	\$ 3,840			
<b>Sonoma State University Professional Services Contract</b>									
GIS Mapping Services - Geography Dept.	80 hrs/year	\$12 /hr.		960	960				SSU Mapping Budget
<b>S.F. Estuary Institute Professional Services Contract</b>									
Assessment/Data Analysis & Training	allowance			10,000	10,000				S.F. Estuary Institute Budget
<b>City of Petaluma Project Management &amp; Administration</b>									
	20% of contract total			9,424		9,424			City of Petaluma Planning Department
<b>City of Petaluma Maintenance Crew &amp; Oversight</b>									
	180 hrs/year	\$45 /hr.		8,100		8,100			City of Petaluma Parks & Recreation Dept.
<b>Sonoma County Water Agency Technical &amp; Maintenance Services</b>									
	320 hours/y	\$45 /hr.		14,400		14,400			Sonoma County Water Agency
<b>Resource Conservation District Technical &amp; Field Review Services</b>									
	60 hours/y	\$45 /hr.		2,700		2,700			Resource Conservation District
<b>Department of Fish &amp; Game Technical &amp; Field Review Services</b>									
	60 hours/y	\$45 /hr.		2,700		2,700			Dept. of Fish & Game
<b>Subtotal Annual Cost of Professional Services</b>			\$	84,444	\$ 26,480	\$ 57,964			
<b>Volunteer Program Services Monitoring &amp; Maintenance Labor</b>									
	1 annually								
Americorps Watershed Project - Maintenance Labor	20 labo	16 hrs/pers	\$15 /year	4,800		4,800			Americorps Watershed Project
Sonoma State University Environmenatal Studies Dept.	20 stu	32 hrs/year	\$10 /year	6,400		6,400			SSU Environmenatal Studies Dept.
Casa Grande High School -United Anglers	20 stu	32 hrs/year	\$7 /year	4,480		4,480			Casa Grande High School -United Angl
Adopt-A-Watershed Elementary Schools	60 stu	16 hrs/year	\$7 /year	6,720		6,720			Adopt-A-Watershed Elementary Schoo
<b>Subtotal Annual Cost of Volunteer Labor</b>			\$	22,400	\$ -	\$ 22,400			
<b>TOTAL ANNUAL OPERATIONS AND MANAGEMENT BUDGET</b>				\$ 106,844	\$ 26,480	\$ 80,364			

**ENDOWMENT FUNDS NEEDED @ 5% capitzization rate**

**\$ 529,600**



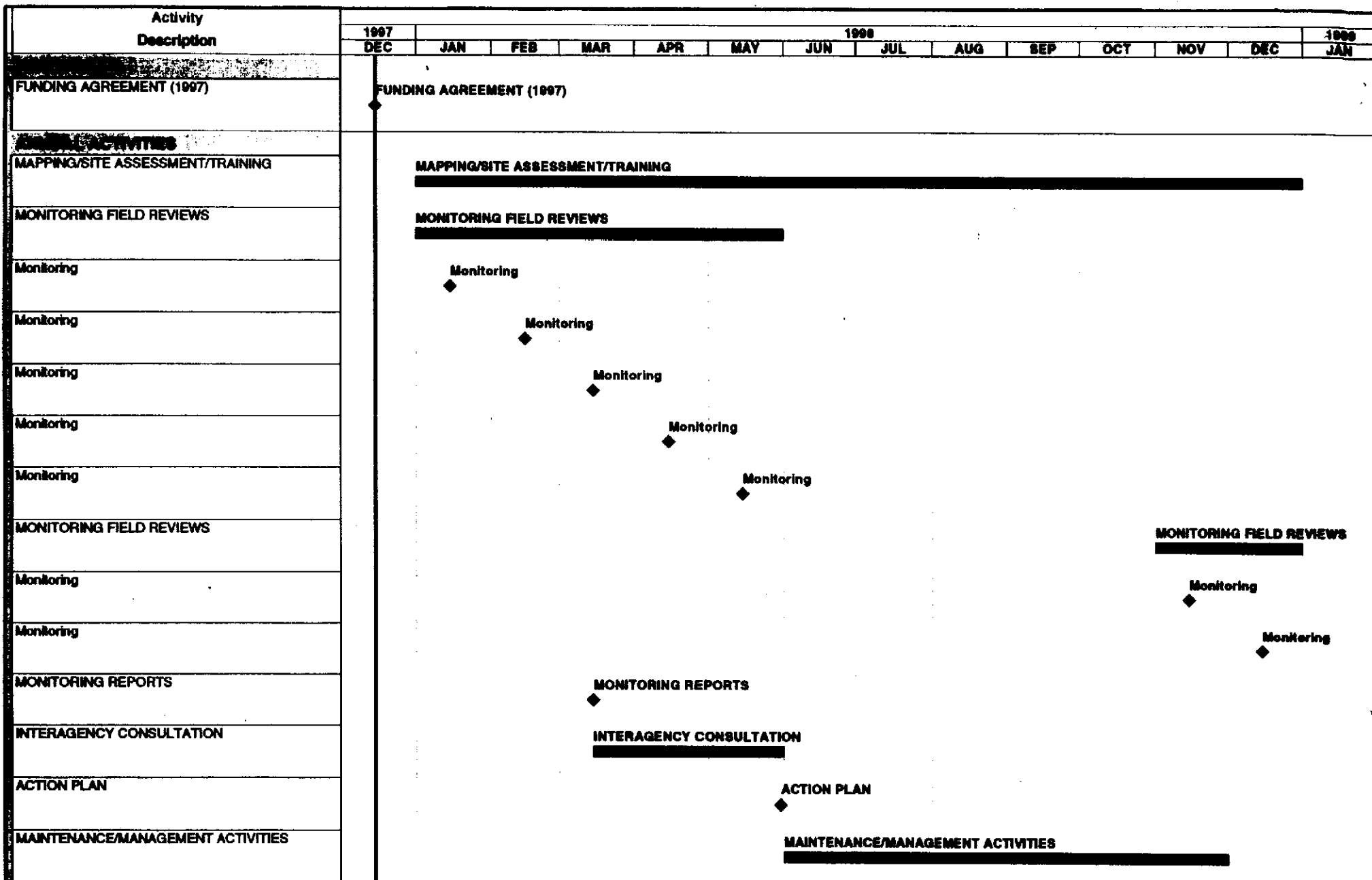
Activity Description	1987												1988												1989											
	N	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	D										
TASK 1: FUNDING AGREEMENT	◆ TASK 1: FUNDING AGREEMENT																																			
TASK 2: DESIGN ANALYSIS	██████████ TASK 2: DESIGN ANALYSIS																																			
TASK 3: SELECT ALTERNATIVE	██████ TASK 3: SELECT ALTERNATIVE																																			
TASK 4: DRAFT AND FINAL PLANS	██████████████ TASK 4: DRAFT AND FINAL PLANS																																			
TASK 5: CEQA/PERMITS	██████████ TASK 5: CEQA/PERMITS																																			
TASK 6: CONSTRUCTION DRAWINGS & PERMITTING	██████████████████ TASK 6: CONSTRUCTION DRAWINGS & PERMITTING																																			
TASK 7: BID PROCESS	██████████ TASK 7: BID PROCESS																																			
TASK 8: CONSTRUCTION/IMPLEMENTATION	TASK 8: CONSTRUCTION/IMPLEMENTATION ███																																			

Project Start	01DEC97	████████████████████	Early Bar
Project Finish		████████████████████	Progress Bar
Date Date	01DEC97	████████████████████	Critical Activity
Run Date	24JUL97		

**ADOBE CREEK PILOT PROJECT  
UPPER WATERSHED IMPROVEMENTS  
PROPOSED SCHEDULE**

Sheet 1 of 1





Project Start	16DEC97	 Early Bar
Project Finish		 Progress Bar
Date Date	16DEC97	 Critical Activity
Plan Date	24JUL97	

ADB1

Sheet 1 of 1

# ADOBE CREEK PILOT PROJECT MONITORING/HABITAT MANGMNT PROGRAM PROPOSED ANNUAL SCHEDULE



## ***SECTION V APPLICANT'S QUALIFICATIONS***

***"We must see nature as a community  
to which we belong, rather than  
a community belonging to us."***

**Aldo Leopold  
*A Sand County Almanac***

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## **V. APPLICANT QUALIFICATIONS**

**City of Petaluma/Principal Grant Contractor/Applicant.** The City of Petaluma has worked diligently on planning for restoration of the Petaluma River and tributary watersheds and has a proven track record of success on many restoration projects. Our experience in successful mitigation and restoration projects is illustrated in the attached Table V-1 which lists the many projects that have been completed or are underway. The City's approach involves development of a project team with the skills, expertise, knowledge and experience to bring a project from conceptual planning through environmental review, site acquisition, design and construction as well as long term maintenance and management. The City's interdepartmental project team is complimented by outside agency support and consultant contract services where appropriate to provide a multi-disciplined team. The Project Team and roles of each participant are illustrated in V-1. As a local government agency, the City has extensive experience with right-of-way procedures for site acquisition and bid procedures for construction projects. The City of Petaluma also has extensive human resources available in an actively involved community of well qualified volunteers as described in Figure V-2.

Project management, grant administration and interagency coordination will be coordinated through the City's Planning Department with Jennifer Barrett, Senior Planner as the project manager. Jennifer Barrett has a proven track record of success in planning, environmental review, permitting and project management for the City's capital improvement program. Her recent accomplishments include completion of the Facilities Plan for the Wastewater Facilities Project, Petaluma Marsh Enhancement Project, Adobe Creek Restoration Project, Biological Mitigation Plan for the Rainier Interchange, and Lakeville Highway Wetlands Mitigation Project.

Technical assistance, plan review and bid procedures will be handled through the City's Engineering Department by Craig Spaulding, Associate Civil Engineer. Craig Spaulding has extensive experience in plan checking and design with particular expertise in hydrologic analysis and grading/earthwork.

Endowment fund investments will be managed by David Spilman, the Finance Director. Financial Reporting, contract payments and grant reimbursement requests will be managed through the City's Finance Department by Paula Corwyn, Controller. The Finance Department has managed numerous state and federal grants and has received numerous awards for excellence in financial reporting from both the Government Finance Officers Association and the California Society of Municipal Finance Officers.

**Agency Partners.** Interagency support will be provided by: (1) Department of Fish and Game - Bill Cox, Fisheries Biologist; (2) Sonoma County Water Agency - Sean White, Fisheries Biologist/Supervisor; Bill Stevens, Maintenance Supervisor; and, Brad Olsen, Coordinator of the Americorps Watershed Program; and, (3) Southern Sonoma County Resource Conservation District - Robert Strand, Resource Specialist; Paul Sheffer, Agricultural Engineering Technician.

**Educational Support.** Josh Collins of the S.F. Estuary Institute will provide training and assistance in development of the Watershed Science Project and long-term monitoring program and ongoing support for providing data analysis and management recommendations. Jean Merriman, Biology Professor, Steve Norwick, Geology Professor, and Brian Baker, Geography Professor at

Sonoma State University will provide technical support for the Watershed Science Project data collection and mapping effort.

**Technical Support.** Jeff Peters of Questa Engineering is the co-author of the Restoration Design and Management Guidelines and the design engineer, construction manager and monitoring consultant for the Adobe Creek Restoration Project and would provide design and construction management services for the upper watershed study. Jeff Peters will also provide long-term monitoring services in conjunction with Sam McGinness, fisheries biologist. Envirotech Operating Services (EOS) is the City's private contract operator for the Wastewater Treatment Plant and will provide volunteer assistance for water quality sample collection and laboratory services for analysis as described in the attached letter of support.

**Volunteer Support.** Brad Olsen, Sonoma County Water Agency is the volunteer coordinator for the Americorps Watershed Program. Tom Furer, Science Teacher at Casa Grande High School is the volunteer coordinator for the United Anglers, and the "instigator" of the local Adobe Creek restoration effort. Diane DiMarco is the local teacher coordinator for the Adopt-A-Watershed Program with local elementary schools. Don Waxman, Petaluma Tree People is the local coordinator for the volunteer program and co-author of the Restoration Design and Management Guidelines.

**FIGURE V-1**  
**City of Petaluma**  
**Petaluma Watershed**  
**Model Restoration and Management Program**

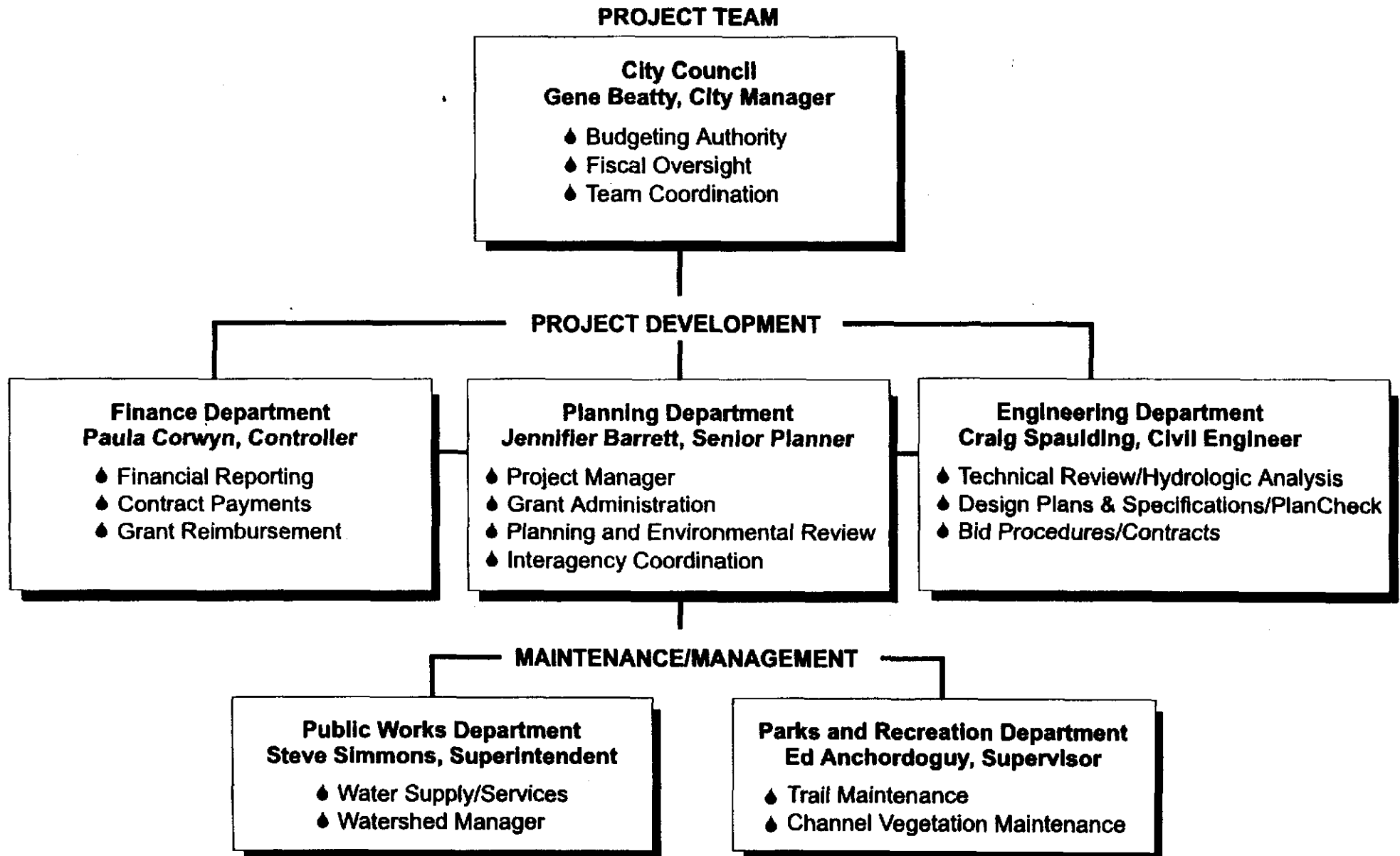


TABLE U-1  
City of Petaluma  
**PETALUMA RIVER WATERSHED MODEL RESTORATION PROGRAM**  
**SUMMARY OF PROJECTS COMPLETED OR UNDERWAY**

PROJECT PHASE/TYPE	STATUS	ESTIMATED COST	FUNDING SPONSOR
<b>PLANNING AND ENVIRONMENTAL REVIEW</b>			
<i>Petaluma River Marsh Restoration (Tidal Reaches)</i>			
Petaluma Marsh Enhancement Plan	Approved December 1992	4 30,000	Coastal Conservancy
<i>Petaluma River Riparian and Aquatic Habitat Restoration</i>			
Petaluma River Access and Enhancement Plan	Approved May 1996	300,000	Coastal Conservancy
<i>Petaluma River Upper Watershed Restoration</i>			
Restoration Design and Management Guidelines for the Petaluma River Watershed	Approved July 1996	68,000	Dept. of Water Resources
Petaluma Watershed Planning Program (Resource Conservation District 205j grant)	Underway 1997-00	194,000	Resource Conservation District
Ellis Creek Enhancement Plan	Approved June 1996	30,000	City of Petaluma
<i>Adobe Creek Riparian and Aquatic Habitat Restoration</i>			
Lafferty Access and Management Plan (Adobe Creek Headwaters)	Underway 1997-98	78,000	City of Petaluma
Adobe Creek Restoration Plan and Management Program	Approved July 1996	18,000	Private Contribution (Questa Engineering)
<b>SITE ACQUISITIONS</b>			
<i>Petaluma River Marsh Restoration</i>			
Oxidation Pond Site 45 acres dedication to tidal marsh restoration	Acquired 1972	300,000	City of Petaluma
Dredge Disposal Site 45 acres dedication to tidal marsh restoration	Acquired 1970	200,000	City of Petaluma
Petaluma Marina (7 acres former Schollenberger Park)	Acquired 1989	1,050,000	County of Sonoma Dedication
Alman Marsh Acquisition of 20 acres tidal marsh	Acquired 1997	54,000	So. Co. Open Space District
<i>Petaluma River Riparian and Aquatic Habitat Restoration</i>			
McNear Peninsula 20 acres	Acquired 1997	170,000	So. Co. Open Space District
Petaluma River Greenway Block Grant Acquisitions for Upper Reaches	Underway 1997-03	1,000,000	So. Co. Water Agency/So. Co. Open Space District
Petaluma Demonstration Wetlands Site (Grayview Farms)	Underway 1997-98	1,400,000	City of Petaluma/So. Co. Open Space District
Petaluma River Corona Reach Flood Easement 20 acres	Acquired 1979	800,000	Developer Contribution
Petaluma River Vista site acquisition	Acquired 1997	80,000	City of Petaluma/TEA Grant
<i>Adobe Creek Riparian and Aquatic Habitat Restoration</i>			
Adobe Creek Upper Reach Cross Creek Dedication 40 acres	Acquired 1997	280,000	Developer Contribution
Adobe Creek Lower Reach Lakeville Business Park Dedication			
Upper Reach Restoration (Cross Creek Restoration and Mitigation Project)			
<b>IMPLEMENTATION/CONSTRUCTION</b>			
<i>Adobe Creek Restoration Project</i>			
Adobe Creek Fish Hatchery	Completed 1992	500,000	United Anglers/Private Donations
Lower Reach Restoration (Lakeville Highway Mitigation Project)	Completed 1996	225,000	City of Petaluma
Middle Reach Enhancement (downstream of McDowell Blvd.)	Completed 1996	22,000	Petaluma Tree People
Middle Reach Demonstration Restoration Project (Phase II)	Under Construction 1997	338,000	Environmental Enhancement Mitigation Program
Middle Reach Enhancement (upstream of Sartori Drive)	Completed 1986	10,000	United Anglers
Middle Reach Restoration (Fairway Meadows Mitigation Project)	Completed 1989	130,000	Developer Contribution
Upper Reach Restoration (Adobe Creek Golf Course Mitigation Project)	Completed 1986	280,000	Developer Contribution
Upper Reach Restoration (Cross Creek Restoration and Mitigation Project)	In Design for Const. 1998	250,000	Developer Contribution
Adobe Road Fish Ladder (County of Sonoma)	In Design for Const. 1998	40,000	United Anglers/NFWS
<i>Petaluma Marsh Enhancement Project</i>			
Oxidation Ponds Marsh Mitigation Project (45 acres tidal marsh restoration)	Completed 1972	40,000	City of Petaluma
Dredge Disposal Site Mitigation Project (45 acres tidal marsh restoration)	Completed 1970	40,000	City of Petaluma
Petaluma Marina Excavation and Marsh Enhancement (7-acre basin)	Completed 1987	1,000,000	City of Petaluma
Case Grande Landfill Closure & Marsh Enhancement (10 acre tidal marsh/9 ac. upland)	Completed 1994	440,000	City of Petaluma
Schollenberger Park Lower Adobe Creek Fencing, Trailhead and Pathway Improvements	Completed 1996	150,000	City of Petaluma/State Grant
<i>Petaluma River Riparian and Aquatic Habitat Restoration</i>			
Payran Reach Flood Control Project Mitigation	In Design for Const. 1998	260,000	U.S. Army Corps of Engineers
Willow Brook Middle & Upper Reach Flood Terrace and Riparian Restoration	In Design for Const. 1998	350,000	Redwood Business Park Contribution
Corona Reach Riparian Restoration (Rainier Ave Mitigation 10 ac. riparian 2 acres wetland)	In Design for Const. 1999	1,500,000	City of Petaluma
Corona Reach Factory Outlet Wetland Mitigation	Completed 1994	190,000	Developer Contribution
Corona Reach Factory Outlet Riparian Restoration	Completed 1994	125,000	Developer Contribution

**TOTAL PROJECT COSTS ESTIMATED**

**\$ 11,910,000**

***SECTION VI  
COMPLIANCE***

***"It is better to be half right on time,  
than totally right too late."***

**Socrates**

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**VI. COMPLIANCE WITH STANDARD TERMS AND CONDITIONS**

The City accepts the terms and conditions as stated in the Request for Proposals and will provide the appropriate forms for submittal with the grant agreement as noted in Table D-1. The non-discrimination form is attached with this grant proposal as specified in the Request for Proposals.

c:\grant\adobe

## NONDISCRIMINATION COMPLIANCE STATEMENT

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**Company Name:** City of Petaluma

---

The company named above (hereinafter referred to as "prospective contractor") hereby certifies, unless specifically exempted, compliance with Government Code Section 12990 (a-f) and California Code of Regulations, Title 2, Division 4, Chapter 5 in matters relating to reporting requirements and the development, implementation and maintenance of a Nondiscrimination Program. Prospective contractor agrees not to unlawfully discriminate, harass or allow harassment against any employee or applicant for employment because of sex, race, color, ancestry, religious creed, national origin, disability (including HIV and AIDS), medical condition (cancer), age, marital status, denial of family and medical care leave and denial of pregnancy disability leave.

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### CERTIFICATION

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*I, the official named below, hereby swear that I am duly authorized to legally bind the prospective contractor to the above described certification. I am fully aware that this certification, executed on the date and in the county below, is made under penalty of perjury under the laws of the State of California.*

**Official's Name:** Gene P. Beatty

**Date Executed:** 7-23-07 **Executed in the County of** Sonoma

**Prospective Contractor's Signature:** 

**Prospective Contractor's Title:** City Manager

**Prospective Contractor's Legal Business Name:** City of Petaluma

**SECTION VII  
ATTACHMENTS**

**PARTNERSHIP LETTERS AND  
LETTERS OF SUPPORT**

*"I truly believe from what I have seen,  
that Sonoma County is the chosen spot  
of all of the earth, as far as nature is concerned."*

**Luther Burbank**

---

Resolution No. 97-166 N.C.S.  
of the City of Petaluma, California

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**APPROVING THE APPLICATION FOR GRANT FUNDS FROM CALFED FOR  
THE ADOBE CREEK RESTORATION PROJECT AND PETALUMA MARSH  
ENHANCEMENT PROJECT AND OTHER RESTORATION ACTIVITIES  
IN THE PETALUMA RIVER WATERSHED**

WHEREAS, an interagency agreement was signed by various state and federal agencies  
to resolve problems in the Bay-Delta system;

WHEREAS, Category III of the funding agreement provides for restoration of habitat to  
implement the long-range plan for the Bay-Delta system;

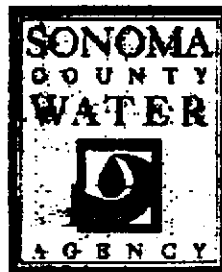
WHEREAS, the voters of the State of California have enacted Proposition 204 which  
provides state funds for grants under the agreement to local, state and federal agencies  
and nonprofit entities for projects to enhance and restore habitats for targeted species;

WHEREAS, CALFED is the interagency association designated to establish procedures  
and criteria for reviewing grant proposals and selecting grant recipients;

WHEREAS, said procedures and criteria established by CALFED require the applicant to  
provide a resolution authorizing such applications;

WHEREAS, if approved, the City will enter into an agreement with CALFED or a  
designated agency to carry out the restoration project(s);

WHEREAS, the City of Petaluma in conjunction with the Coastal Conservancy and other  
responsible agencies has developed restoration plans for the Petaluma River and the  
Petaluma Marsh which are significant resource areas in the Bay Delta system that are  
within the City of Petaluma's jurisdiction;



July 22, 1997

CALFED Bay-Delta Program  
1416 Ninth Street, Suite 1155  
Sacramento, CA 958145

Regarding: City of Petaluma Restoration Projects

The Sonoma County Water Agency has demonstrated support for watershed restoration in the Petaluma area, and provides an active hydraulic maintenance program throughout the area. In keeping with this commitment, the Agency fully supports the further development of our partnerships with the City of Petaluma through our participation on the interagency team for the Adobe Creek Pilot Project and Petaluma River Greenway.

In these projects, the Sonoma County Water Agency will participate in the interagency team reviewing annual monitoring reports, and conducting annual field reviews. The Agency will also provide technical assistance in reviewing hydrologic modeling studies as well as in-kind contributions for maintenance activities. For the Petaluma River Greenway, the Agency has pledged \$500,000 in block grant funds from Flood Control Zone IIA for site acquisition. This commitment will be provided at \$100,000 per year for the next five years.

Thank you for the opportunity to express Sonoma County Water Agency support for the Adobe Creek Pilot Project and the Petaluma River Greenway Project. We are pleased to enter into this exciting partnership with the City of Petaluma for the restoration of these important watershed components.

Sincerely,

A handwritten signature in dark ink, appearing to read "William Stephens".

William Stephens  
Water Agency Operations Coordinator



SONOMA COUNTY  
AGRICULTURAL  
PRESERVATION  
& OPEN SPACE  
DISTRICT

747 Mendocino Avenue  
Suite 100  
Santa Rosa, CA  
95401-4850  
(707) 524-7360  
Fax: (707) 524-7370

David Wm. Hansen  
General Manager

June 13, 1997

Mr. Warren Salmons  
Assistant City Manager  
City of Petaluma  
P.O. Box 61  
Petaluma, CA 94953

RECEIVED  
JUN 18 1997  
PLANNING DEPARTMENT

Dear Mr. Salmons:

The Sonoma County Agricultural Preservation and Open Space District is pleased to inform you that the City of Petaluma's proposed Petaluma River Marsh and Wastewater Reclamation project and Petaluma River Greenway project have both been recommended for funding under the District's Competitive Matching Grant Program. A total of six (6) proposals from four (4) cities were submitted and evaluated in accordance with established grant criteria. The following four proposals were selected for potential funding and were determined to be consistent with the Open Space Authority's Expenditure Plan on May 29, 1997:

Nathanson Creek Preserve and Trailway Corridor (Applicant: City of Sonoma) - Preservation of a 3/4 mile reach of Nathanson Creek riparian corridor through acquisition of interests in lands in fee or through conservation easements adjacent to Nathanson Creek City Park; development of a multi-use trail and pedestrian/bicycle access to adjacent neighborhoods; and creation of an ecological study area for students.

Cloverdale River Park (Applicant: City of Cloverdale) - City of Cloverdale and Sonoma County Regional Parks joint project to create a 68.5-acre River Park with one mile of Russian River frontage; acquisition of interests in lands adjacent to Cloverdale River Park; restoration and enhancement of natural communities; public access to the Russian River and construction of a multi-use trail connecting County and City-owned lands.



Petaluma River Marsh & Wastewater Reclamation (Applicant: City of Petaluma) - Acquisition of a 150-acre portion of two contiguous properties for creation and enhancement of a freshwater and brackish marsh habitat utilizing highly treated effluent from the City's proposed wastewater treatment facility.



Petaluma River Greenway (Applicant: City of Petaluma) - Acquisition of interests in fee or through conservation easements along the Corona and Denman reaches of the Petaluma River to create a greenway and trail; preserve the floodplain; and enhance riparian, oak woodland and grassland habitats consistent with the Petaluma River Access and Enhancement Plan.

**Southern Sonoma County Resource Conservation District  
1301 Redwood Way, Suite 170 - Petaluma, California 94954  
(707) 794-1242 - (707) 794-7902 FAX**

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July 22, 1997

CALFED Bay-Delta Program  
1416 Ninth Street, Suite 1155  
Sacramento, California 95814

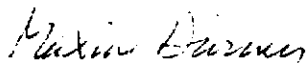
Dear CALFED Technical review panel,

Southern Sonoma County Resource Conservation District (District) is pleased to be working in partnership with the City of Petaluma (City). Our combined efforts in the Petaluma River watershed will expedite restoration and enhancement of priority instream and shaded riverine habitats currently supporting steelhead trout and other native species.

The City's comprehensive restoration project for Adobe Creek will complement the current planning effort the District has initiated for the entire Petaluma River watershed including headwater areas of the City's projects.

The District strongly supports the City of Petaluma's Adobe Creek Pilot Project proposal and hopes this synergistic effort to enhance and restore critical wildlife habitat and provide outreach becomes a model for other communities to take action.

Sincerely,

  
Maxine Durney  
Board of Directors

---

**Southern Sonoma County Resource Conservation District: President - Patricia Ward, Vice President - Paul Martin, Board - Maxine Durney, Mitch Mulas, Jim Ryan. Associate Directors - Susan Bianchi, Bill Hammerman, Craig Jacobsen, Clarence Jenkins, Becky Jenkins.**

# San Francisco Estuary Institute



**188 Richmond Field Station**  
1325 South 46th Street  
Richmond, California 94804  
Office (510) 231-9539  
Fax (510) 231-9414

## Memorandum

**To:** North Bay Watershed CalFed Interests: Proposal Authors  
Jennifer Barret (Adobe Creek)  
fx (707) 778 4498  
Robert Rand (Sonoma Creek)  
fx (707) 794 7902

**From:** Josh Collins, SFEI  
**Re:** SFEI cost estimates for Watershed Science  
**Date:** 15 July 1997

Please find attached a simple description of the SFEI technical role and associated SFEI costs for helping to start watershed science in local watershed. As noted in the narrative, these estimates are rather coarse, due to their dependence upon a number of assumptions about your previous work and available local materials and expertise.

The outline of tasks reflects Phase 1 of the Bay Area Watersheds Science Plan. All of the tasks listed are regarded as essential. Tasks A1, A2, B1, and B2 could be substantially modified to eliminate GIS. A base map will still be required, but it might consist of an existing suitable local map or standard USGS quadrangles, outside of a GIS, if costs so dictate. Most watershed scientists regard GIS as an essential tool. It could be developed later, but retrofitting data to a GIS has proven to be more expensive.

The estimated costs for base map production in a GIS depend upon using USGS products called DOQQ's (Digital Ortho Quarter Quadrangles) to rectify local aerial photography. However, the DOQQ's have not been completed for your watershed. The USGS Mapping Division in Menlo Park is submitting a proposal to CalFed to complete the DOQQ's for all of the North Bay. The USGS and I are drafting language that can be used in our proposals, and theirs, to cross-reference with regard to these particular costs. The language will demonstrate coordination among proposals and prevent any suggestion of "double dipping" by the USGS or SFEI. I will provide this language later this week.

Please also note that the cost estimates only pertain to Phase 1 watershed science. Phase 1 approximately corresponds to one year of work. SFEI costs for subsequent and continuing consultation with local partners for field training, QA/QC, data transfer, and help with interpretation of data depend upon local needs. I suggest that for the purpose of CalFed proposals, these costs should be estimated by you, but should not exceed about \$20K per year.



Bay Area Watersheds Science Plan  
Year One Watershed Science Objectives, Basic Work Plan, and SFEI Cost Estimates  
revised 07/15/97

1

## Implementation of the Watersheds Science Plan: General Estimates for SFEI Starting Costs

### Background

SFEI recognizes that it does not have to be directly involved in all technical aspects of implementation of the Bay Area Watersheds Science Plan. For example, Phase 1 involves much office work to compile existing reports and maps that is best accomplished by local interests.

This invites some estimation of what technical role SFEI might usually have to implement the plan in a local watershed. Some of the answer is provided within the Plan (see Appendix II: More about the role of SFEI). Beyond these general statements, the technical role of SFEI depends upon the capabilities of local partners. By making some assumptions about what local interests are able to do, the role of SFEI can be further described.

These estimates of the cost for SFEI to help implement the Watershed Science Plan are based upon the following assumptions.

- There is adequate local computing capability to receive the EcoAtlas (Phase 1 part A).
- There is aerial photography for constructing a base map (Phase 1 Part A).
- There is local ability to compile existing information on cultural and Physical and Biological Characteristics (Phase 1 Parts B and C).

Based upon these assumptions, it might be inferred that, *for initial implementation of the Watersheds Science Plan in a local watershed (Phase 1)*, SFEI will mainly be involved in EcoAtlas transfer, base map construction (using available photography), and transfer of protocols for the collection and analysis of hydrologic and geomorphic data, including historical information. Subsequent and ongoing involvement by SFEI might relate to facilitating the transfer of protocols for ecological and water quality measures and internet data exchange, helping to interpret the results, and designing a long-term monitoring plan.

Based upon the assumptions listed above, the expected role of SFEI can be translated into the following four objectives.

**Bay Area Watersheds Science Plan**  
**Year One Watershed Science Objectives, Basic Work Plan, and SFEI Cost Estimates**  
 revised 07/15/97

2

**Typical SFEI Objectives for Phase 1**

- A. Develop a base map in the EcoAtlas to visualize study findings and to serve as a geographic directory to data and data sources.
- B. Provide support for data quality assurance and control and data management.
- C. Provide training for hydro-geomorphic profiling of the selected watershed, and initiate such a profile.
- D. Help interpret the findings in the context of flooding, pollution control, and natural resource conservation.

**Typical Tasks and Deliverables for Objectives A-D**

- A.1 Transfer the existing EcoAtlas to one or more appropriate local partners. EcoAtlas would include existing historical and modern views of the alluvial plain, existing DEM (USGS Digital Elevation Maps) and aerial photo coverages, and supporting documentation. Cost will depend upon computing capabilities among local partners. Deliverables would be the EcoAtlas for extension into a local watershed.
- A.2 Scan, rectify, and mosaic suitable aerial photography (minimum operational scale 1:2000). Deliverable would be a photographic base map for use in the field and office.
- B.1 Develop GIS file structure and transfer protocols. Cost depends upon number of partners. Deliverable would be a set of technical and operational protocols for data sharing among all watershed interests.
- B.2 Develop Internet or other file transfer links between SFEI and partners. Ideally, each partner should be able to use EcoAtlas to access data, data sources, and base map images. Cost depends upon existing capabilities of partners. Deliverable would be a set of tools to enable data sharing among all watershed interests, following the protocols developed in Task B.1.
- C.1 Initiate an historical ecology project to describe the relative influences of natural history and human history on changes in watershed conditions. This will involve the identification of one or more local people who will receive project guidelines and training from SFEI. Cost involves consultation by SFEI historical ecology staff. Deliverable would be a community-based project to describe local historical conditions for three time periods (mission, agriculture, and urban), as baselines for assessing change in watershed form and function.

Bay Area Watersheds Science Plan  
Year One Watershed Science Objectives, Basic Work Plan, and SFEI Cost Estimates  
revised 07/15/97

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C.2 Conduct watershed reconnaissance to describe hydro-geomorphic conditions and processes.

Subtask C.2.1: Develop protocols for assessing bank condition, thalweg profile, hillside mass wasting, and basic hydrological summaries (stage height, flow, flow-frequency curves, runoff coefficients, etc.), prior to new data collection. Cost depends upon suitability of existing protocols, and availability of volunteers or staff of local agencies for field work. Deliverable would be a quality control plan.

Subtask C.2.2: Conduct initial field reconnaissance and subsequent field surveys, including survey of bank condition. Cost depends upon length of creek, size of watershed, number of people to be trained (3 maximum), and availability of volunteers or staff of local agencies for field work. Deliverable would be a set of maps in the EcoAtlas of the condition of left and right banks, point sources of flow input and diversion, culverts and other man-made control structures, distribution of bed-rock channel controls, longitudinal profiles of bankfull height and terraces, overview of relative importance of three major sediment sources (channels, banks, and hillsides including new construction), distribution of perennial flow and perennial pools, distribution of sediment sources and transport and storage reaches.

Subtask C.2.3: Establish reference reaches. Cost depends upon length and complexity of creek hydro-geomorphology and size of watershed. Deliverable would be a set of monumented reaches for long-term monitoring of flow and channel condition.

Subtask C.2.4: Map hillslope mass wasting. Cost depends upon amount of mass wasting, and number of people to be trained (3 maximum). Deliverable would be a set of maps in the EcoAtlas of landslides and debris shoots apparent on the base map and affecting sediment supply to the creek.

Subtask C.2.5: Summarize existing hydrology data per tributary and mainstem systems. Cost depends upon amount and quality of existing data and availability of local expertise. There will be little or no costs for streams that are not gauged (where there are no local data). There will be higher costs for streams with abundant data and no expertise. Deliverables would include rating curves, plots of at-a-station hydraulic geometry, plots of daily rainfall, plots of storm frequency, flood-frequency curves, flow duration curves, plots of bankfull discharge, and runoff coefficients.

**Bay Area Watersheds Science Plan**  
**Year One Watershed Science Objectives, Basic Work Plan, and SFEI Cost Estimates**  
 revised 07/15/97

4

- D. Assess the watershed based on the information assembled. Cost depends upon availability of local expertise and historical information. Deliverables would be a paper report with supporting GIS (the EcoAtlas) summarizing the existing conditions and changes in the creek bed, banks, and hillsides, with an emphasis on water and sediment supplies, and in the context of flood management, pollution control, and the conservation of natural resources.

**Approximate Typical Costs for 10 square-mile Watershed**

The following estimates of SFEI costs to help start watershed science in a local watershed depend upon the assumptions listed above on page 1, and are further based upon the SFEI experience in watershed assessment and the transfer of related science and technology to local partners. The actual cost could be less, but are not likely to be greater than the estimates. Dollar amounts include products plus training.

<i>TASK</i>	<i>Estimate</i>
A.1	2K
A.2	4K
B.1	5K
B.2	7K
C.1	7K
C.2.1	3K
C.2.2	35K
C.2.3	2K
C.2.4	10K
C.2.5	5K
D	10K
<b>Total</b>	<b>90K</b>

end

7/11/97



## SONOMA STATE UNIVERSITY

Department of Environmental Studies and Planning  
707 664-2306

1801 East Coast Avenue  
Rohnert Park, California 94926-3600

**CALFED Bay-Delta Program**  
**1416 Ninth Street, Suite 1155**  
**Sacramento CA 95815**

Dear Sir or Madam,

Over the years, the faculty of the Department of Environmental Studies and Planning at Sonoma State University has had numerous contacts with the staff of the City of Petaluma concerning many environmental matters, especially related to water quality. Many students have worked as interns, and a number of our graduates are employees of various city departments and in the waste water treatment plant. We also have a number of graduates who are employed by the Sonoma County Water Agency which supervises dredging the Petaluma River.

I teach the course on soil science and also the course on water pollution abatement and I regularly use the Petaluma watershed for field trips with my classes. It is a good place to train students about the processes of soil erosion, geomorphology and hydrology because it is large enough to be interesting and small enough to be manageable.

I am very interested in participating in the educational and monitoring aspects of the Petaluma River Plan. I have visited the Adobe Creek Restoration Project which is an excellent site for educational activities because it is so compact and yet contains both rural and urban water quality and hydrology problems, it has both residual and depositional soils, and both erosional and alluvial landforms.

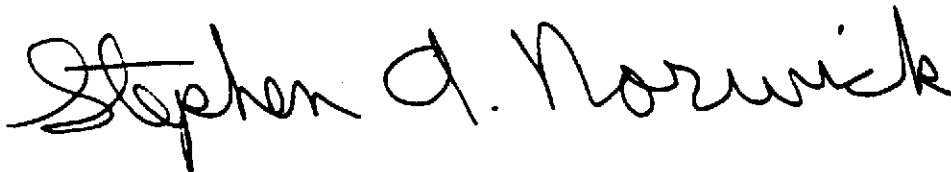
THE CALIFORNIA STATE UNIVERSITY

Bakersfield • Chico • Dominguez Hills • Fresno • Fullerton • Hayward • Humboldt • Long Beach • Los Angeles • Maritime Academy • Monterey Bay  
Northridge • Pomona • Sacramento • San Bernardino • San Diego • San Francisco • San Jose • San Luis Obispo • San Marcos • Sonoma • Stanislaus

I would very much like to represent Sonoma State University, and especially my department as a partner in the program which is proposed by Ms. Barrett of the City of Petaluma. I am prepared to consult with her concerning erosion control in the headwaters and habitat restoration along the waterways which are tributary to the Petaluma marshlands, especially Adobe Creek. I am interested in organizing students to assist in the remedial work which must be done in the watershed.

I would like to assist in the long term monitoring to measure the success of the restoration of the watershed and marsh. I also teach the computer modeling course, and I would like to organize a student team to construct a working model of the hydrology and water quality. I am not a biological ecologist, but I am prepared to find students and faculty from the life sciences who can lend their skills to the biological monitoring which must be done to assure that the alterations which we intend to carry out really are a benefit to the natural processes in the Petaluma River and Marsh.

Sincerely yours,

A handwritten signature in black ink that reads "Stephen A. Norwick". The signature is written in a cursive, flowing style with a large, prominent 'S' at the beginning.

Dr. Stephen A. Norwick

Professor of Geology

In the department of Environmental Studies and Planning

07-16-97

To: Jennifer Barrett

From: Chris McAniff

Subject: CALFED Proposal Information

US Filter is proud to participate in this project. We will donate labor for sample collection and visual observation along with certain laboratory analysis of the samples. Since all analysis has yet to be determined I am unable to commit to all analysis and associated cost that may be required or desired. Please find attached, example cost estimates of laboratory analysis from a local laboratory.

US Filter will at a minimum provide the following:

Labor to collect samples from four sites along Adobe Creek four times per year. We believe it will take approximately 40 hours the first year due to cross-training and Standard Operating Procedure development. This is a \$1,040.00 value.

Parameters for in-house analysis:

Turbidity, TSS, pH, Dissolved Oxygen, Flow, Salinity/conductivity, Temperature, Coliform(total), Alkalinity, Hardness

US Filter in-house laboratory analysis cost estimate:

$\$175/\text{site} * 4 \text{ sites} * 4 \text{ times/year} = \$2,800.00$

There may be other parameters suggested for analysis that will result in additional cost due to the need to use an outside laboratory. I suggest we talk to the lab about supplying this analysis as a donation.

Other laboratory analysis parameters:

Ammonia, nitrate, nitrite, phosphate, Coliform(fecal)

Outside laboratory cost estimate:

$\$120/\text{site} * 4 \text{ sites} * 4 \text{ times/year} = \$1,920.00$

If you require additional information, please contact me.



# *The Watershed Project*

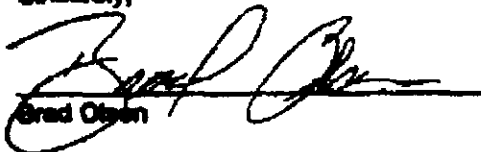
an AmeriCorps Program

**CALFED Bay-Delta Program  
1416 Ninth Street, Suite 1188  
Sacramento, CA 95814**

We look forward to working with the coalition of agencies and organizations that are collaborating to implement higher and better practices and projects for our environment, our community.

We will continue to work diligently on forwarding the success of environmental education in the Petaluma River Watershed, and truly look forward to implementing the restoration / planning efforts described.

Sincerely,



**Brad Olson  
Regional Coordinator  
The Watershed Project**

**California Regional Environmental Education Coordinator  
California Department of Education**

**Chief Financial Officer  
The Foundation for the Advancement of Environmental Education**





## Sonoma State University

Geographic Information Center  
Rohnert Park, CA 94928  
(707) 664-2183 -- Fax (707) 664-3920

July 22, 1997

RECEIVED  
JUL 23 1997  
PLANNING DEPARTMENT

CALFED Bay-Delta Program  
1416 Ninth Street, Suite 1155  
Sacramento, CA 95815

Dear Sir/Madam:

We are very interested in participating as a partner in the City of Petaluma's watershed restoration planning project. The Geographic Information Center at Sonoma State University would assist with the mapping and analysis portions of the project.

While we would need to work out specific details of our work in the project, I can give a general outline of the tasks we would likely engage in and approximate time required for such tasks. I have listed only tasks that would involve digitizing, compiling, analysis and output of watershed data; tasks involving data collection would be separate activities not covered here.

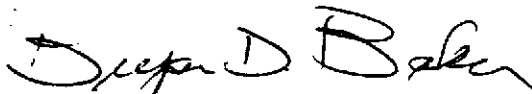
Task	Hours	Cost
Import data layers from existing GIS databases (transportation, hydrography, political boundaries, census demographics, digital elevation model, city land parcels)	100	\$2,000
Digitize maps compiled by project: geology, land use, storm drains, areas with city sewer and water service, flood zones, vegetation, landslides, watersheds, fires, rural land parcels, septic tanks, private wells, and wildlife habitat, plus historical data on above layers	300	\$6,000
Analysis of data: demographics of sub-watersheds, area calculations (watersheds, riparian zones, storm drains, landslides), road density; historical change in land use and drainages	200	\$4,000

Output: plot maps of each layer and analysis variable	50	\$1,000
Administration	100	\$4,000
Materials (paper, printer ink, backup tape, etc.)		\$300
Overhead (32%)		\$5,500
Total		\$22,800

The GIC is equipped with hardware and software for such a project, including tablet digitizers, scanner, color printer, large-format color plotter, in addition to major geographic information systems (GIS) software packages including Arc/Info, ArcView, and Erdas. Much of the work done by our Center is by student interns with training in GIS, which allows us to give real-world job experience to students in a technologically advanced area.

Please contact me if you have any questions about our role in the watershed planning project.

Sincerely yours,



Bryan D. Baker  
Director and Associate Professor of Geography

LYNN WOOLSEY  
8TH DISTRICT, CALIFORNIA

COMMITTEES:

BUDGET

ECONOMIC AND EDUCATIONAL  
OPPORTUNITIES

WASHINGTON OFFICE:

338 CANNON BUILDING  
WASHINGTON, DC 20515-0506  
TELEPHONE: (202) 225-5181

# Congress of the United States

House of Representatives

Washington, DC 20515-0506

DISTRICT OFFICE:  
1101 COLLEGE AVE., SUITE 200  
SANTA ROSA, CA 95404  
TELEPHONE: (707) 542-7182  
FROM PETALUMA CALL:  
(707) 795-1482

NORTHGATE BUILDING  
1050 NORTHGATE DRIVE, SUITE 140  
SAN RAFAEL, CA 94903  
TELEPHONE: (415) 507-9554

INTERNET ADDRESS:  
woolsey@hr.house.gov

July 23, 1997

RECEIVED

JUL 24 1997

PLANNING DEPARTMENT

CALFED Bay-Delta Program  
1416 Ninth Street, Suite 1155  
Sacramento, CA 95814

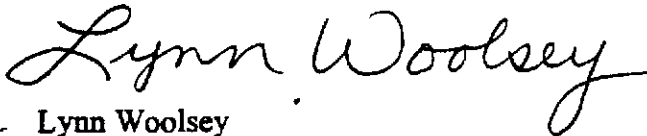
To Whom it May Concern:

I am writing to express my support for the City of Petaluma's proposal for funding from the CALFED Bay-Delta Program. Petaluma has already made outstanding achievements in their efforts at environmental restoration in the community.

As I understand it, funding from CALFED would allow the city to expand restoration projects for the Petaluma Marsh, Adobe Creek and upper reaches of the Petaluma River. Together, these projects would create a model watershed project for research and education. This model will be tied together by a watershed science and habitat management program focusing on Adobe Creek.

Thank you for your careful consideration of the City of Petaluma's application for funding. It is my sincere hope that Petaluma will receive the funding it needs to continue and expand its environmental preservation efforts for the community.

Sincerely,



Lynn Woolsey  
Member of Congress

LW:tf



# Coastal Conservancy

April 28, 1997

Mr. David Hansen  
General Manager  
Sonoma County Agricultural Preservation  
and Open Space District  
415 Russell Avenue  
Santa Rosa, CA 95403

Re: City of Petaluma Open Space Grant Proposals for  
Acquisition of the Petaluma River Greenway and  
Marsh Restoration Site

Dear Mr. Hansen:

I am writing to express enthusiastic support for the City of Petaluma's applications for grant funding to acquire greenway lands along the upper Petaluma River and to restore wetlands adjacent to the City's oxidation ponds.

The Conservancy is gratified to have been able to assist the City in preparing natural resource enhancement and public access plans for both the relatively urbanized upstream area and the more rural downstream wetlands. The City has been very successful in working with landowners, citizens and agencies in crafting detailed, feasible plans for protecting and improving river resources and in carrying out plan recommendations.

Implementation of the projects for which the City is requesting Agricultural Preservation and Open Space District funding would enable creation of a buffer for fish and wildlife habitat in the upstream area and restoration of wetlands and a migration corridor for the endangered saltmarsh harvest marsh near the oxidation ponds. Both of these undertakings are essential components of the plans for which the Conservancy provided funding.

We hope that the District will contribute to Petaluma River protection and restoration by providing the funding assistance requested by the City.

Sincerely,

Michael L. Fischer  
Executive Officer

1330 Broadway, 11th Floor

Oakland, California 94612-2530

510-286-1015 Fax: 510-286-0470

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**SAN FRANCISCO BAY JOINT VENTURE**

mailing address: Coastal Conservancy, 1330 Broadway, Suite 1100, Oakland, CA 94612  
phone: 510-286-6767 fax: 510-286-0470

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July 17, 1997

RECEIVED

JUL 21 1997

PLANNING DEPARTMENT

Kate Hansel  
CALFED Bay-Delta Program  
1416 Ninth St., Suite 1155  
Sacramento, CA 95814

RE: City of Petaluma Category III Proposals for the Petaluma Marsh Restoration, Petaluma River Greenway and Adobe Creek Restoration Project

Dear Kate:


I am writing on behalf of the Management Board of the San Francisco Bay Joint Venture in support of the City of Petaluma's grant applications to acquire lands to create a greenway along the Petaluma River, to restore 150 acres of wetland habitat in the Petaluma Marsh and to restore the Adobe Creek Watershed.

As you know, the Joint Venture is a partnership of public agencies, environmental organizations, business representatives and agricultural interests working cooperatively to protect, restore and enhance all types of wetlands around the San Francisco Bay region. We have begun assisting with the completion of existing wetlands protection projects and developing new projects and have been working with the city of Petaluma on their projects.

The City of Petaluma has done an excellent job of implementing the Coastal Conservancy funded Petaluma Marsh Enhancement Plan and Petaluma River Access and Enhancement Plan. The Joint Venture strongly supports their work. The creation of a greenway along the upper reaches of the Petaluma River will create a buffer from urbanization and provide for habitat restoration as described by the River Plan. The proposed marsh restoration project near the City's oxidation ponds will create approximately 50 acres of salt marsh along the river as envisioned in the Marsh Plan. The City's work on Adobe Creek on behalf of fish and wildlife has helped bring back steelhead and salmon.

We support these proposals and encourage CALFED to consider them favorably. Thank you for your consideration.

Sincerely,

  
Nancy Schaefer  
Coordinator

✓ cc: Jennifer Barrett, City of Petaluma



## **Trout Unlimited of California**

July 22, 1997

Mr. Lester Snow  
Executive Director  
CALFED Bay-Delta Program  
1416 Ninth Street, Suite 1155  
Sacramento, Ca. 95814

Re: City of Petaluma-Restoration Project:


Dear Mr. Snow:

Trout Unlimited is America's leading coldwater fisheries conservation organization dedicated to the protection and restoration of our trout and salmon resources and the watersheds that sustains those resources. We have over 1100 members in Marin and Sonoma Counties who voluntarily contribute their personal resources to aquatic habitat protection and restoration efforts.

I have reviewed the Petaluma Watershed Model restoration and Management Program with some of our local members and they are very supportive of the program. Not only will it benefit the riparian and aquatic habitat in the watershed, the program will greatly improve the water quality in the river and the San Pablo Bay and the Wildlife Refuge. As the San Pablo Bay is used by the outgoing migrating juvenile salmon and steelhead as a nursery area prior to their journey to the ocean the improved water quality will greatly enhance their survival.

As previously indicated, Trout Unlimited supports the above entailed program and looking forward to an improved Petaluma River watershed and improved water quality in San Pablo and San Francisco Bay.

Respectfully submitted,

  
Stan Griffin  
Regional Vice-President  
Southwest Region

5200 Huntington Ave. #300, Richmond, CA 94804-5416 • Phone 510-528-5390 • Fax 510-525-3664

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*Protecting and Improving Your Fishing Future*

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## SONOMA COUNTY GROUP

P.O. Box 466, Santa Rosa, CA 95402

(707) 544-7651

CALFED Bay-Delta Program  
1416 Ninth St. #1155  
Sacramento, Ca. 958145

RECEIVED

JUL 16 1997

PLANNING DEPARTMENT

To Whom It May Concern:

The Sonoma Group of the Sierra Club supports the restoration efforts of the City of Petaluma in the projects: Petaluma Marsh, Petaluma River Greenway, and Adobe Creek. These restoration efforts are important to bringing wildlife back into habitats that had been degraded. Thanks for your consideration of these important efforts.

Sincerely,



David Bannister  
Chair, Sonoma Group

6/97

STATE OF CALIFORNIA  
STATE WATER RESOURCES CONTROL BOARD  
**DIVISION OF WATER RIGHTS**  
**ORDER**

**ORDER APPROVING CHANGES IN THE PURPOSE AND PLACE OF USE UNDER  
THE CITY OF PETALUMA'S CLAIMED PRE-1914 APPROPRIATIVE WATER RIGHT  
AND AMENDING STATEMENT OF WATER DIVERSION AND USE NO. 4680**

**WHEREAS:**

1. The City of Petaluma claims a pre-1914 appropriative right, commencing in 1868, to the surface flow of Adobe Creek in Sonoma County for the purpose of providing a municipal water supply to the City of Petaluma.
2. Statement of Water Diversion and Use No. 4680 was filed by the City of Petaluma with the State Water Resources Control Board on January 1, 1969.
3. A petition to change the purpose and place of use was filed on February 27, 1997 with the State Water Resources Control Board (SWRCB) pursuant to Water Code Section 1707. In its petition, the City requested that waters previously used for municipal purposes be dedicated to instream uses.
4. The City of Petaluma also submitted documentation to substantiate the claim of a pre-1914 appropriative right. However, the documentation failed to substantiate the quantities used by the City during each season since 1868.
5. The claim of a pre-1914 appropriative right is acknowledged for the purposes of this change order without quantifying the right by season. Although the right has not been quantified, in no instance can the maximum entitlement exceed the capacity of the previously existing Lawler Water Treatment Plant which was 1.2 cubic feet per second on a continuous basis.
6. The SWRCB has determined the petition to change the purpose and place of use does not:
  - a) constitute the initiation of a new right;
  - b) increase the amount of water the petitioner is entitled to use; or,
  - c) unreasonably affect or operate to the injury of any other lawful user of water.



NOW, THEREFORE, IT IS ORDERED THAT:



1. The purpose of use made under Statement of Water Diversion and Use No. 4680 be amended to: Instream Fish and Wildlife Habitat Enhancement and Recreation.
2. The place of use under Statement of Water Diversion and Use No. 4680 be amended from the City of Petaluma's service area to that reach of the Adobe Creek channel commencing at the City of Petaluma's historic point of diversion located within the SW¼ of SE¼ of Section 12, T5N, R7W, MDB&M, to the confluence of Adobe Creek and Petaluma River located within the NW¼ of NW¼ of Fractional Section 2, T4N, R7W, MDB&M.
3. The Upper Adobe Creek Diversion Dam of the City of Petaluma shall not obstruct the natural surface flows of Adobe Creek.

Dated: JUNE 21 1997

ORIGINAL SIGNED

BY GERALD E. ANTON *(Signature)*

Edward C. Anton, Chief  
Division of Water Rights

# Fishing program deserves support

**T**HE UNITED ANGLERS from Casa Grande High in Petaluma are in desperate need of corporate or private donors for an altogether worthy cause. A huge student-backed project is currently stalled for lack of funds.

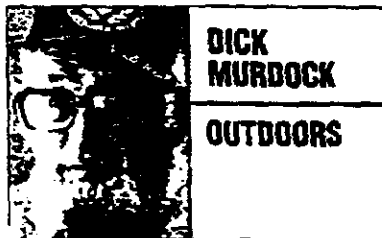
Construction has stalled for a 250-foot fish ladder on Adobe Creek, half a mile from Casa Grande High, that will bypass a barrier blocking access to 5½ miles of upstream spawning habitat. The project has the approval of National Marine Fisheries and Department of Fish and Game.

"Everything is in line," said Tom Furrer, teacher and project advisor. "We're ready to go. We have a federal permit. Also, we have an on-time commitment but are \$20,000 short."

This crucial project, Furrer explained, will open the upper watershed to spawning steelhead that has been blocked for 100 years or more. He doesn't want to see the returning steelhead deprived again.

Just two weeks ago, gathered in a hole near the blockade, students excitedly counted 14 native steelhead ranging in size from six to 14 pounds each. They watched and protected them regularly, but returned one morning to find the area strewn with empty beer cans and cigarette butts. The steelhead were gone. Poachers had cleaned them out.

The fish ladder would have



prevented this," Furrer said. "Five hundred tons of rock will be moved to form a safe passageway for spawning steelhead to bypass the barricade. The kids have wanted to tackle this project for years."

Fund-raising is not new for the dedicated students of Casa Grande. Through the years, they've cleaned up Adobe Creek, planted trees, restored steelhead and salmon runs and helped raise money for a modern, state-of-the-art on-campus trout and salmon hatchery. They've pioneered the cause of stream restoration. Many other schools have patterned similar programs after United Anglers of Casa Grande's Adobe Creek projects.

Indeed there is a critical need for corporate and private donors to assist financially with the construction of this all-important fish ladder. It is a project that will endure well into the 21st century and beyond, symbolizing young people's concern about the future.

If interested, contact Tom Furrer at United Anglers of Casa Grande High School, 333 Casa Grande Road, Petaluma, 94954, or call 707-728-4703.

Fish

Ladder is now  
funded for  
construction in 1997.

→ In 1997, Fish and Game officials collected over 250 steelhead at this location and transplanted them upstream (some as large as 12").

## CASA GRANDE ANGLERS

# Teens release 60,000 salmon

By MEG MCCONAHEY  
Staff Writer

**T**IBURON — There were no cheers, claps or whistles, just a few low murmurs, as the final hooks were unclipped and the nets lifted, releasing some 60,000 squirming little salmon into the San Francisco Bay.

More than two dozen Petaluma teens who fanned out on the pier at the National Marine Fisheries Service lab on an overcast Sunday morning were unexpectedly silenced by the emotion of setting free thousands of fish they raised from eggs.

The teens craned their necks and squinted their eyes, many peering through camera viewfinders, for a goodbye glimpse of their fish already headed toward the Golden Gate in the cloudy green waters of the bay.

"This is one of our crowning moments in many, many years of hard work," said Tom Furrer.

For the past 12 years the Casa Grande High teacher has inspired and guided thousands of students in a long-range dream of restoring the fish run to Adobe Creek and four other neglected and dying tributaries of the tidal Petaluma River.

While the club in the past has returned small numbers of fish to their habitat, this was the first large scale release.

All but one of the school's United Anglers Club members, and a number of alumni, showed up to weigh the fish, fortify them with one last meal of high protein pellets, and then set them free in hopes at least some will find their way back to Petaluma to spawn.

"I raised them, hands on

See Salmon, Page B2



Casa Grande junior Janeen Gold nets some Chinook salmon to be released before being released into the San Francisco Bay on Sunday in Tiburon.

"They're my little babies. So I had to see them off," said Joanna Stiles, a University of California, Davis freshman who last year toiled countless hours to make this moment happen. She wasn't about to miss it.

"It's amazing we're really able to do this. It's a real sense of accomplishment," she said.

The teens on their own time scoured Petaluma's dry and degraded creeks, rescuing and retrieving 16 Chinook salmon trapped and adrift in the ether at the hands of poachers, or in hot evaporating pools. Back in their half-million dollar hatchery, the budding fisheries biologists gave nature a nudge, retrieving sperm and fertilizing the eggs, which they pampered until the hatchlings emerged.

Some 5,800 yearlings were brought in June to a holding pen

owned by the Tye Club of San Francisco, which, like the anglers, is dedicated to reviving dwindling fish populations. There, along with 50,000 slightly bigger salmon cared for by the Tye Club, Casa's babies have been fattening up on a collective 200 pounds of eels a day, gaining strength for their final voyage into open sea, where they will fan out as far as Mexico or Alaska.

On Sunday, the fish tipped the scales at slightly under one-third of a pound. Provided at least a few survive ocean life and the treacherous final trip up the Petaluma River to spawn, they will be a robust 11 pounds.

Wherever they wind up, they'll be easily identifiable. Students injected all their fish with a new dye visible under black light, a laborious project that took more than a week. Casa is the only West Coast hatchery using the new tagging system.

Although Sunday's release closed one chapter, the kids continue their work. Before heading down to Tiburon, several Anglers made an emergency trip to the hatchery to retrieve eggs from a pregnant fish. And Furrer noted that it will take a community-wide commitment to clean and revegetate the ailing creeks over the next few years in time to welcome the fish back for their spawn in three years.

## TOM STIENSTRA OUTDOORS

### Students bring a stream back to life

**M**IRACLES can happen after all. It turns out that life can be revived from death.

The donations had just plain stopped coming in for a group of high school students, leaving them bewildered — and \$180,000 short — in an ambitious plan to build a campus fish hatchery and rehabilitate a Bay Area stream where steelhead had become extinct. It appeared the dreams of 270 volunteer students over an eight-year span would finally be buried, just like the ghosts of a long-dead fishery.

All they needed was a little miracle, \$180,000 worth, and this week, they got it. Peter and Connie Pfendler, who own a cattle ranch in Sonoma County, strolled onto the campus of Casa Grande High

School in Petaluma and wrote a check for the entire amount.

"Everybody is walking around in shock," said Rodney Jason, 17, a senior who is working on the project. "It's unbelievable."

To Peter Pfendler, however, it made perfect sense.

"We've been watching them for years and I'm excited about young people taking the initiative to correct environmental problems," he said. "I've seen the dedication. They are a model for others to follow. I have talked to people who did not believe a group of kids could succeed at this. Well, we really want to see this thing work. I want to see steelhead return."

#### A boost of energy

The donation brings the fund-raising total to more than \$500,000, enough to build a state-of-the-art hatchery to produce thousands of steelhead and striped bass each year. It also provides a boost of energy for the students to complete the rehabilitation of a small Sonoma County stream that runs adjacent to Casa Grande High School.

It is called Adobe Creek, a tributary to the Petaluma River that runs to San Pablo Bay. Eight years ago, the stream had been trashed, de-watered, denuded of vegetation, and with the fish extinct, there were plans to put the



Rodney Jason



Laura Hundt

stream in a pipe and bury it, or to turn it into a concrete canal, just as has been done to small streams in urban areas throughout America. But the students at Casa Grande High, under the direction of adviser Tom Furrer, had another vision.

"The kids saved that creek from a certain death," Furrer said. "Now they are going to bring it all the way back."

The students formed a volunteer chapter of United Anglers of California, then went to work. In the past eight years, they have hauled 75 big truckloads of garbage out of the stream, planted 10,000 seedlings and 5 million redwood seeds for riparian habitat, completed erosion control, and also petitioned the state for increased stream flows. There's more. They built and posted 177 bird boxes to provide alternative nesting sites

until the trees grow to maturity, compelled two large developers to complete restoration work of their own, and then started a small hatchery that produced 2,000 steelhead.

This is why the students were selected late this week to the National Freshwater Fishing Hall of Fame, the first time a student club has ever been honored in the country.

#### Doesn't come easy

The irony is that none of this is coming easy. One time, a county worker bulldozed 200 trees that had been planted just the year before. Last summer, someone stole an entire grove of redwood trees that had been raised to 6 feet from seedlings. In 1988, there was a toxic spill on the lower river that was named as a Superfund cleanup site. Four-wheel drive cowboys like to drive their big rigs right down the stream, plowing the river. Locals keep dumping garbage in the stream, day after day.

"We can go down there one day and pick up everything, then go down the next day and there's more stuff," said Laura Hundt, 15, a sophomore.

"Lately, we've been finding a lot of car parts, wires, seats and engine parts. Some people back their trucks up and unload their garbage right in the stream," said Jason.

"We've pulled out diapers, couches, vacuum cleaners, car parts, you name it. Another problem is that people put stuff in the gutters and sewer drains along the streets and think it's going to disappear. Well, it doesn't. It runs right into the creek."

The biggest setback was when the campus hatchery was closed down because the building did not meet earthquake standards. This came after 2,000 steelhead hatchlings had been raised and planted in the river — fish that will swim to sea, then return as adults to spawn.

"So with the hatchery closed down, what do they do?" Furrer said. "They decide to build a big, modern hatchery. The fact it would cost a half million dollars didn't even faze them. Some people said it would be impossible, but they are doing the impossible."

#### Construction renewed in spring

With the miracle \$180,000 provided this week, they have that half million, and the construction work will be renewed in early spring.

"I have had a great deal of satisfaction trying to bring this stream back, more than I can put into words," Jason said. "I know now that people can make a difference in our environment, and with determination you can

succeed, no matter how large the task."

Earlier this past week, when other students were off enjoying a holiday, Hundt and Janal Bruner, 17, ventured to the creek's headwaters. They planted 50 seedling-sized Giant Sequoias along with thousands of redwood seeds.

"It was a great feeling to put these little seedlings in the ground," Hundt said. "Hopefully they will grow nice and tall, make shade for the fish, and bring back the natural ecosystem."

"I've never really been involved in anything before, but when I started working on this I got the feeling I was doing something right, and it was good to be surrounded by people who had the same values and beliefs," she said. "There is a great feeling of friendship and family within the group. We can go down there and pick up garbage, and as long as we're together, it's fun."

"We are getting a great deal of pleasure bringing life back to our stream."

For information about the Adobe Creek Restoration Project, write Tom Furrer, Casa Grande High School, 333 Casa Grande Road, Petaluma, CA 94954.